

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of January 6, 1891.

The President, Dr. LANDON CARTER GRAY, in the chair.

THERAPEUTIC EXPERIMENTS WITH NITROGEN MONOXIDE.

Dr. W. R. BIRDSALL related the results of a number of experiments made with this gas for the purpose of testing its therapeutic value. The speaker had thought it advisable to begin his investigations on the class of cases in which the symptoms, such as pain, spasm and some morbid mental states, called for immediate relief rather than to watch its effects upon the general course of a chronic disease. In all of the sixteen cases where the gas was administered for the relief of certain symptoms, the action as a therapeutic agent had proved valueless. The chief cause of the failure, in the speaker's opinion, was the transient effect of the gas due to its rapid elimination. The extensive series of experiments published by the Odontological Society of Great Britain showed that the average time required for the production of anæsthesia was only eighty-one seconds, and the time from the beginning of anæsthesia to recovery of consciousness but one hundred and fifteen. The various theories of the physiological action of nitrogen monoxide gas were reviewed by the speaker, who then concluded from deductions from other observers' work and his own experiments that this gas seemed to be an agent which during its inhalation interfered, by displacement, with the normal supply of oxygen to the tissues. And as the cortical functions were the most readily disturbed by imperfect oxygenation, the most striking effect was shown in the marked cerebral disturbance following its administration; that the rapid elimination prevented prolonged effects after the supply was cut off, and that the first effect of the gas was on the higher cerebral functions. The long-continued and repeated inhalations of the gas could only be of service when it was decided to deprive the system of

oxygen. The inhalation of a gas that produced marked sensations which were sometimes of a startling character might prove a powerful agent for suggestion, particularly when coupled with verbal suggestion by the physician. In fact, the speaker was inclined to attribute the beneficial effects obtained with hypochondriacal and hysterical patients to this element in the nitrogen monoxide gas. Finally, his view, based on physiological and clinical observations, was that the uses of nitrogen monoxide for medical and surgical purposes were restricted to its effects as an anæsthetic or as a placebo.

Dr. R. L. PARSONS said that his experiments with the gas had not given very satisfactory results. He had administered it in a case of melancholia with insomnia. It had produced a feeling of comfort and well being during the time of inhalation, but the effects were very transient. In another case of opium habit and alcoholism, in which there existed intense muscular pain and insomnia on withdrawal of the opium, he had given the gas in the hope that it would compensate for the drug. During the administration the patient was fairly well pleased, but had become dissatisfied because the results were not permanent, and were sometimes disagreeable.

Dr. W. M. LESZYNSKY said he had taken the opportunity to test this gas in asylum practice for cases of melancholia of mild type, but without any beneficial results. The gas required to be rapidly increased. He hardly thought the cylinder exhibited by the reader of the paper would hold gas enough to do much good.

Dr. W. J. MORTON, Dr. C. L. DANA and others spoke to the question, the general opinion seeming to be that nitrogen monoxide was not likely to rank very high as a therapeutic agent.

A STUDY OF THE RELATION OF INTERCURRENT ACUTE DISEASES AND SERIOUS INJURIES TO RECOVERY IN TWO THOUSAND CASES OF INSANITY.

Dr. W. D. GRANGER read a paper with this title. He thought that the close attention paid to all of the details relating to the life and surrounding comforts of the insane had much to do in reducing to a minimum the intercurrent of acute diseases in this class of patients. In two thousand cases, extending over an observation period of eight years, the author had never seen acute articular rheumatism, but

three cases of pneumonia, three of typhoid fever and one of diphtheria. Sore throat was abundant, as it was usual in all aggregations of people. Erysipelas appeared from time to time. Epidemics were likely to appear. In spite of a common idea, and the reports of other observers, there was little to be told about the influence of disease on insanity. The simplest common affection from which they suffered was pain, often sudden and severe. Toothache was often added, followed by alveolar abscess. It seldom produced fever. He had never seen more than temporary improvement from pain, though he believed severe toothache might produce recovery. Pain might increase all the mental symptoms, making mania more active, melancholia deeper, and even dementia more pronounced. Often it had no effect whatever, and often the severest pain seemed to be borne with indifference. Sometimes active mania was quieted and a rational and self-controlled condition approached. Melancholic patients of a decided type most often bore pain uncomplainingly, but sometimes showed marked mental improvement. In some sore throats, especially the ulcerative varieties, mental improvement of a temporary nature was always expected. The conditions were like those observed in pain, though, as a rule, more pronounced. In some chronic cases of mania, with confusion and incoherence, the patients talked rationally, while the violent were quieted and often rational. Melancholia was less affected. Dementia was almost always brightened. The expression changed, the mind was more active, the symptoms of venous congestion might partly disappear. In the cases of pneumonia observed, mental improvement occurred in one case only, but in that the change was remarkable; as soon as the disease waned, the patient relapsed into his demented state. In pneumonia the improvement was only temporary. Out of seventy-seven cases of dysentery only four could have been said to have improved mentally. The author thought that his observations should teach how little truth there was as to the beneficial influence of intercurrent diseases and their effect upon insanity. Considering severe injuries upon insanity, there was much more to be said in favor of the theory. The histories of six cases, in which the patients had jumped from heights of from twenty-five to forty feet from the ground, some sustaining injuries and others not, but with marked improvement in all, were fully detailed. To attempt to explain the reason for improvement or recovery, after either disease or injury, would be, the speaker said, to

involve oneself in an almost hopeless problem, unless further research revealed more definite data upon which to work.

Dr. PARSONS said that he had seen a few cases of intercurrent disease in which the patients previously insane had become entirely rational; but his experience was the same as that of Dr. Granger, that these results were not permanent. There was no doubt that in some cases of insanity, associated with epilepsy, surgical interference or other traumatisms, would retard the explosions for some time. He had seen one case in which counter-irritation by means of a seton was kept up for some years without any recurrence of the fits; upon the healing of the outlet an attack of acute mania had supervened.

Dr. E. D. FISHER thought that the idea propounded by Dr. Granger was the correct one. If it were a fact that there was no pathological lesion in mental disease, it could hardly be urged that intercurrent maladies could have any curative effects. But in the functional forms he could understand how an acute lesion, either from an injury or discharging sore, might have an effect by directing illusions or hallucinations into other channels. But in chronic disease, such as general paresis or mania, or other mental disease with a known pathology, he did not believe the intercurrent disease would have any lasting effect.

A CONTRIBUTION TO THE DIAGNOSIS OF RAYNAUD'S DISEASE.

Dr. G. W. JACOBY read a paper on this subject. Although a great deal had been written upon the subject of local asphyxia and symmetrical gangrene since Raynaud first drew attention to this disease, and very many new cases of the affection had been described, the knowledge at the present time of all of its features, except perhaps the purely clinical ones, was hardly any more advanced than it was at the time of Raynaud's writing. Etiologically we had, in a certain sense, made some progress, for now we realized that other causes than those which Raynaud believed to be the only admissible ones might have a supplementary productive action. As it was recognized that the symptoms of local asphyxia and symmetrical gangrene were often due to unrecognizable states of disordered blood mixture, the author simply touched upon this point. He said that upon the question of anatomical nerve disease as a cause of symmetrical gangrene there could not be any uncertainty.

That the nerves did exert a certain amount of influence upon the production of gangrene, either indirectly, by effecting a contraction of the vessels and thus suppressing the nutrition of the part (Raynaud), or by producing it independently of the vascular system, could not be denied. According to the assertions of Quesnay, section of the nerves was said to produce gangrene of those parts in which they took their course. This assertion had been made repeatedly since then, but the proofs were wanting on account of the impossibility of completely cutting through all the nerves of a part and leaving the arteries uninjured. On the other hand, a clinical proof of this dependence was found in the fact that gangrene of an extremity occurred after ligature of an artery more easily if the nerve had been injured than if this was not the case. As stated, in order to make a diagnosis of symmetrical gangrene in Raynaud's sense, we must be able to exclude gross nerve disease. This could not be done in many cases. The class of cases which the speaker dealt with were those cases which came under the caption of gangrene due to pathological changes in the blood-vessels. It was *sine qua non* for the diagnosis of Raynaud's disease that the lumen of the vessels should be free and that their walls be found in a healthy condition, so that vascular disease might anatomically be excluded as a causal agency in the production of this affection. If, with this in mind, we reviewed the various cases reported, we would find that although pathological examinations had not been frequently made, still in a number of cases in which this had been done, the condition of the arteries did not fulfill the required obligations. All cases of spontaneous gangrene, symmetrical or unilateral, would require careful attention and examination. In many cases we would be able to discover some local change in the arteries of the affected parts, while in others some general affection of the arterial system would explain the gangrene. Many cases would, however, always remain, no matter how careful the examination, in which no such explanatory conditions could be detected. There were, however, still other cases, which in view of the fact that many of the so-called cases of Raynaud's disease were not symmetrical, and might be ascribed to nerve influence, which were better explained by the assumption of an obliterative endarteritis. It was well known that syphilis produced upon the arteries a periarteritis which gradually encroached upon their entire diameter, finishing as an endarteritis and thus narrowing or even totally obliterating the calibre of the vessel. It was also

well known that many cases of spontaneous gangrene resembling Raynaud's disease in every particular were often due to such affection of the arteries. What was known about the symptomatology of syphilitic affections of the superficial arteries, as revealed by a study of the few published cases, was as follows: Two phases of the pathological changes found a clinical expression and obliged us to differentiate a stage of induration, with preservation of the lumen of the artery, and one of obliteration of the artery with all its consequences. In the obliterative stage we had symptoms of ischaemic progressing in extent according to the seat of the affected arteries and according to the difficulty encountered in the establishment of the collateral circulation; if the terminal arteries of the extremities were affected, the disorders would be very marked, consisting in oedema, slight cyanosis, reduction of temperature, and finally we might also have gangrene of the parts. If, however, small arteries were affected whose collateral ramifications could be replaced, then the symptoms would be transient or entirely wanting. From a consideration of the various data, from the nephritic as well as from the syphilitic cases, we were unavoidably forced to the conclusion that those authors who admitted that an affection of the small arteries, be this arteritis obliterans or other change, did produce a similar clinical picture to that found in Raynaud's disease herein were right, but that these same authors were wrong when they contended that a differential diagnosis between the two affections could always be made. The points which were adduced by the various writers for the purpose of making this differential diagnosis were the following: Gangrene occurred in some cases of Raynaud's disease in places where endarteritis obliterans had thus far never been described. The lesion in many cases of Raynaud's disease was confined to the superficial layers of the cutis, and this never occurred in endarteritis obliterans; the absence of those etiological moments which produced vascular disease, as syphilis, absence of all palpable anatomical changes in the vessels, and, finally, the occurrence of symmetrical gangrene in neuropathic individuals only. That these points were invalid and some of them erroneous became clear when we considered that it was probable that arteritis obliterans occurred in the vessels of the skin—a condition which had been pointed out by Klotz and Hutchinson. From these facts we were justified in concluding that the differential diagnosis between Raynaud's disease and anatomical disease of the arteries could

in many cases not be made intravitam; or, in other words, many of so-called Raynaud's disease were really cases of arteritis.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, December 22, 1890.

The President, Dr. H. C. WOOD, in the chair.

Paper of Dr. Henry. See page 154.

DISCUSSION.

Dr. FRANCIS X. DERCUM.—I am glad to hear the report of a case similar to the one which I reported some time ago in the "University Medical Magazine." I believe that there are a number of these cases which are mistaken for ordinary obesity. These cases, however, present certain distinctive features which to my mind fix their myxœdematous character, although they differ from typical myxœdema. They differ, in the first place, in not involving the true skin. Myxœdema proper involves the true skin primarily. This becomes excessively thickened, and there is not only a deposit of mucin, but the connective tissue becomes embryonal in type, and the fat also assumes an embryonal character. They differ, in the second place, in the fact that changes about the face are not marked. The changes appear in the arms and the legs. In my own case, the changes were first noticed in the arms, and subsequently made their appearance in the knee of one side. There were these local indurations of these presumably fatty masses, and over these swellings there was marked diminution of sensation. In some there was absolute want of sensation. In my case there was also dull pain at various points, but at certain times the pains become very acute. These attacks of acute pain are accompanied with decided increase in the induration of these masses, which have a lobulated or worm-like feel beneath the skin. I think the same is noted in Dr. Henry's case.

My patient also had a history of dryness of the skin which was persistent. She did not sweat, even when pilocarpin was given.